INTERNATIONAL JOURNAL OF INNOVATIVE RESEARCH & DEVELOPMENT

ISSN 2278 – 0211 (Online)

An Analysis of Economic Valuation through Contingent Valuation Method in Simien Mountains National Park (SMNP), Ethiopia

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Abstract:
Economic valuations have proved to be important tools in improving natural resources management and conservation. However there are several methods to evaluate recreational value of natural ecosystem, the Method that is used in this study is only the contingent valuation method (CVM), because this method is recommended as providing acceptable economic measures of the social benefits of recreational activities for both the used and non-used values. The study was conducted based on a random survey of 150 respondents of foreign visitors that visited the park were interviewed. The interview was conducted through a structured questionnaire over a period of eight months. The average age of respondents included in the sample is 38 years, ranging from 18 to 65 years. Perception on biological diversity loss justification in the context of the conservation of park showed that the majority of visitors agreed to the point. This concern is reflected by the respondents in WTP for the SMNP is encouraging and showed positive attitude. Value of willingness-to-pay was positively affected by the respondent's income, age, and education.

Keywords: *Economic Valuation, Contingent Valuation Methods, Simien Mountains, Willingness to Pay (WTP)*

1. Background of the Study

The Semen (also: Simien, Semien or Simen) Mountains are located in the North of Ethiopia, in the Gonder (also: Gondar) Administrative Region, 110 km NE of the town of Gondar. It extends in between 13^0 11' N to 38^0 04′ E. The Semen Mountains National Park belongs to the world heritage sites and part of a high mountain massif in North-West Ethiopia. It consists of areas created by the major uplifting of the earth's surface, in contrast to its surrounding regions. It includes extensive high plateau areas (about 3200 m to over 4000 m), steep escarpments and low-lying parts (locally known as "Kolla" or "Simien lowlands"; (below 3000 to below 2000 m) and are known for their high biodiversity. The highest elevation is the Ras Dejen Mountain with an altitude of 4620 m above sea level (Hurni, 1986). The Semen Mountains conservation area consists of about 400 km^2 proposed buffer zone and 190 km^2 National parks and counts among the most biologically diverse areas in the world. It contains two critical endangered large mammals and several types of locally endemic fauna and flora (Puff and Nemomissa, 2002)

The Simien Mountains is a symbolic proud of the northern Ethiopia. Area that is typical of Ethiopia high lands at their extremes. The natural beauty of the Simien landscape attracts the international tourist and has high tourists' value. Semen has rich biodiversity with altitudinal successions of fauna and flora and many endemic species of which the *Walia ibex* has become a national symbol although it is now threatened by extinction. Semen has been inhabited by human land users for more than 2000 years and thus provides outstanding cultural heritage and co-existence of religious groups. Ras-Dashen (4620m) is the highest peak of the Simien Mountains in Ethiopia. Unfortunately Simien is also plagued with a typical feature, which have made Ethiopia world famous. Degradation of natural resources particularly vegetation and soils is wide spread and leads to a chronic food deficit under present standards of mountain agriculture, traditional farming while preserving a high diversity of cultural plants have a very low standards of productivity, contemporary technological, social and economic development is virtually absent in this remote area.

Economic valuations have proved to be important tools in improving natural resource management and conservation. Much of the world's precious natural resources lie in the developing countries, it is ironical that few economic valuation have been done in these parts of the world. The case of Ethiopia is no different. The usefulness of economic valuations with respect to the conservation and management of natural resources has been well documented in the literature (Pearce, *et al.*, 1994).

When the market for a certain good is competitive enough, economic activities can be studied by the market pricing mechanism. Because this is usually not feasible in case of environmental goods with embodied natural and cultural heritage, particularly methods for economic valuation of such goods have to be applied (Verbic and Slabe-Erker, 2009). Economic valuations of natural resources

have been used in conservation and management of protected areas (Pearce *et al.,* 1994; Wilson and Carpenter, 1999). Contingent valuation method is widely applied in estimating the economic valuation of both marketed and non-marketed goods (Brookshire *et al.,* 1983; Majid *et al.,* 1983; Walsh *et al.,* 1986; Dixon and Sherman, 1990).

Local communities often find themselves in a position where they have to decide on what spatial changes and development guidelines to implement within the scope of nationally or regionally adopted spatial and development planning documents. Their decisions must address not only operating costs, but also the positive and negative spatial impact of the development programmes on people's welfare. Ensuring that spatial and environmental impacts are given appropriate weight in the decision-making process, it is imperative to determine their monetary value (Verbic and Slabe-Erker, 2009).

The case analyzed in this study, the impact of tourism and other developmental activities in Simien Mountains National Park is evaluated, together with its natural and cultural goods. This is an area with distinct qualities of international importance. The purpose of the study was to evaluate the overall value of environmental goods, i.e. the use value and the non-use value for residents and visitors to the area. For this purpose, the contingent valuation method was selected; mainly due to significant non-use values in the area, the total value for residents and visitors, and the varying selection of goods in this area. The contingent valuation method was used to estimate the willingness-to-pay for the protection and conservation of protected areas. Only stated preference methods, such as contingent valuation method (Whittington, 1998; Garrod and Willis, 1999; Nunes *et al.,* 2003; Verbic, 2006) can be used to estimate environmental values such as biotic diversity, preservation of cultural and art collections, artifacts and monuments etc.

Contingent valuation surveys were first proposed in theory by Ciriacy-Wantrup (1947) as a method for eliciting market valuation of a non-market good. The first practical application of the technique was done by Davis (1963) on the economic value of recreation in the Maine woods. Numerous applications of the method to various public goods and studies of its methodological properties were conducted worldwide in the 1970s and 1980s. A review of the theoretical and empirical basis of contingent valuation is presented in Mitchell and Carson (1989), Arrow *et al.,* (1993) and, more recently, in Moons (2003), Venkatachalam (2004) and Schlapfer (2006). Nowadays, the method is widely used in cost-benefit analysis and environmental impact assessment. Recent applications that are relevant for the present study include Hadker *et al.,* (1997), Cicia and Scarpa (2000), Maharana *et al.,* (2000), Lette and de Boo (2002), Navrud and Ready (2002), Laitila and Paulrud (2006), Bateman *et al.,* (2006) and Verbic and Slabe-Erker (2009).

The main concept of the contingent valuation method is to model individuals' responses in terms of their reactions in specific hypothetical situations (Verbic and Slabe-Erker, 2009). In the case of environmental evaluation, questions relate to the highest sum that individuals are prepared to pay for a change (conservation) at the environmental goods level (willingness-to-pay). Changes in the level of environmental goods can then be described by a number of different development scenarios. The form of the contingent valuation method was defined on the basis of scenarios and research objectives. This article describes the combination of classical contingent valuation method with a closed-version of discrete choice method, where the protest responses are removed. The present analysis represents one of the relatively few applications of the method to the World Heritage site, and certainly one of the very few applications of the method to Ethiopia in general.

1.1. Statement of the Problem

The Simien Mountains National Park has international significance due to its bio- diversity and its outstanding biophysical features. However, the area is under heavy human pressure. Rural poverty is widespread and is undermining the traditional agricultural subsistence system at an accelerating pace. Even if the park and its restrictions on human use were not abolished, the sustainability of the mountain livelihood system of the people in Semen could not be guaranteed in the long term.

The main challenge is how to establish a sustainable and efficient level of operations for the maintenance of natural resources and to ensure food security in the area. However, the challenge the park faces for sustainable development are absence of clear policy with legal institutional and planning frameworks and lack of accepted international administrative procedures. Wildlife development is a specialized field and requires skilled man-power to effectively implement the integrated development program. There are substantial problems of integration, overlaps and duplication of efforts among development agencies, with no common vision and objectives. This problem is compounded by lack of administrative procedures and a development plan. The development plan that has been worked out to reflect the needs of immediate and long term solutions is not yet reviewed and endorsed for implementation by the government.

1.2. Objectives of the Paper are

- To identify the economic Valuation of the National Park
- To apply the contingent Valuation Method (CVM)
- To analyze the Willingness To Pay (WTP) of tourists after visit for the conservation purpose.

1.3. Methods

Several methods are available to evaluate recreational value of natural ecosystem. But in this study only the contingent valuation method (CVM) was used. This method has been recommended as providing acceptable economic measures of the social benefits of recreational activities for both used and non-used values (Walsh, 1986; Navrud, 1992; Cordell and Bergstrom, 1993). The other method used in this type of assessment was cost-benefit analysis (Ableson, 1979; Kneese, 1984; Haneley and Spash, 1993) but it has a long controversial history (Hufschmidt *et al.,* 1983).

1.3.1. Sample Design and Data Source

For the purpose of economic valuation of the area, separate survey was conducted among local communities and visitors (domestic and international) to the park to establish possible differences in the responses and view points of the stakeholders. The study was based on a random survey of 150 international visitors that visited the park during 2010 were interviewed. The interview was conducted through a structured questionnaire (Bishop and Heberlin, 1992; Arrow *et al.,* 1993) over a period of eight months (September to December) and (January to April) corresponding with two peak tourist seasons. The sampling was random and took place at different times of a day and during all days of the week to ensure a representative sample. At the outset, the interviewer introduced himself to the respondent. Respondents were told about the nature of work and assured that responses were to be used for research purposes, that their co-operation to this effort was sought, and confidentiality to be maintained. All respondents were brought to a minimum level of information about the benefits of conserving and maintaining the park (Maharana, 2000). Face-to-face interviews (Arrow *et al.,* 1993) were conducted at the site and lasted 40 minutes on an average.

The survey was in the form of personal interviews, primarily due to the proven effectiveness of this approach, especially in similar cases, when a relatively complex set of environmental goods is involved. The method of surveying is rather involved, so experienced interviewers with expert knowledge were used. Visual aids were also used, which required a high level of concentration from the respondents. The final questionnaire was then designed on the basis of the test-survey and the decision to carry out personal interviews. It was important that questions were included in the survey that would enable the presence of biases to be detected and its significance to be established (Verbic and Slabe-Erker, 2009).

The first set of questions in the questionnaire was intended to establish rapport with the respondents and to determine their social, economic and demographic characteristics. The second set of questions in the questionnaire served to identify the respondent's attitude to categories of economic development on one hand and conservation of environmental goods, primarily the natural and cultural heritage on the other. On the basis of the respondents' reactions to the statement it was possible to form the so-called "development profile" of respondents.

The third set of questions was intended to identify the respondent's knowledge of the studied park and to find out their perceptions of the objectively identified problems that affect the park. It was assumed that a larger recognized value for an area implies a greater willingness-to-pay for the realisation of the targeted development scenario (Maharana, 2000).

The fourth set of questions finally led to the contingent valuation itself. This time there was a visual presentation and description of the targeted development scenario in the park with an explanation that the implementation of the scenario would be taken on by an existing trust worthy local institution. This was an attempt to establish trust in the respondent and to avoid a protest response and it also represented that would desire to acquire an exclusive value of willingness-to-pay and not a value that would relate to all similar projects (Maharana, *et al.,* 2000; Verbic and Slabe-Erker, 2009).

1.3.2. The Contingent Valuation Method (CVM)

The contingent valuation method (CVM) attempts to value non-market goods by asking people directly for their willingness-to-pay to obtain specified improvements or to avoid decrements in them, using social scientific survey techniques (Heberlein, 1988; Bishop and Heberlein, 1992; Arrow *et al.,* 1993). The CVM uses a questionnaire or survey to create a hypothetical market or referendum, and then allows the respondent to use it to state or reveal his or her WTP for recreation, option, existence and bequest values (Mitchell and Carson, 1989; Mullarkey and Bishop, 1995). The main concern in using the WTP technique was with the validity of responses, specifically, would the respondents actually pay the money they agreed to pay in survey?

The Contingent Valuation Method remains the subject of heated debate within the non-market valuation literature due to hypothetical nature of markets (Hanemann, 1994), and its susceptibility to biases (Cummings *et al.,* 1986; Mitchell and Carson, 1989; Freeman, 1993). Attempts have been made to minimize the biases in order to get a reliable estimate of economic value of recreation. In person interviews were initiated by informing respondents about the work and background of the Simien Mountains National Park. Respondents were told about the nature of the work. The nature of the interview was explained, and the issue of the Park was introduced. Face-to-face interviews secure a high response rate as to other survey techniques. In CV exercise, interviewer adopted a double bounded dichotomous choice formulation, as it is more information intensive (Hanemann *et al.,* 1991). First, the respondents were asked whether they were willing to pay for the non-market commodity benefits after being given proper information about the commodity. If the answer was "No", the process ended there with that particular respondent. If the answer was "Yes", then the second step was to determine the maximum amount he/she was willing to pay.

Socio-economic details were also collected for regression purposes. Apart from name and addresses, information on age, sex, education, occupation, and income were also collected. An attempt was also made to establish the importance of environmental issues perceived by the respondents, and to measure whether or not the respondent demonstrated implicit value for the environment and non-use values.

2. Review of Literature

Over the last three decades, there has been growing debate on the effects of tourism in developing countries. Mass tourism has recently inflicted adverse impact on environment of mountain areas (Pawson *et al*., 1984; Zuric, 1992 and Rai and Sundriyal, 1997). Nature-based tourism denotes all tourism directly dependent on the use of natural resources in a relatively undeveloped state, including scenery, topography, water features vegetation and wildlife etc. thus it includes hunting, countryside motor biking and white-water rafting, even if the use of the natural resources by the tourist is neither wise nor sustainable (Butler, 1992 and Ceballos-

Lascurain, 1996).

According to Eagles (2001), the name national park is closely associated with nature-based tourism, and is a symbol of high quality natural environment with well-designed infrastructure. Designation may suggest that the area is pristine, with recreational opportunities undisturbed by risk of encounter with motor vehicles, for example, and that the area is managed to provide solitude (Loomis, 1998).

In order to sustainable tourism to be successful, human must consider how tourists value and use natural environments, how communities are enhanced through tourism and identification of tourism social and ecological impacts and their management, Mc Cool, (1985), Sustainable tourism has been a key concept for tourism researchers and tourist industry since the early1990's. Butler (1993) and Brown and Fravar (1979), stated that policies are relevant to both the public and private tourism sectors.

English Tourism Council and Tourism Management Institute (2003) defined that the fundamental principle of sustainable tourism is "Managing visitor impacts on the local destinations economy and environment to benefit all stakeholders both in the present and the future". Vast numbers of impoverished people throughout the world face this dilemma every day of their lives. The values that understand the nature of the product life cycle are in its relationship with marketing strategy. It will alert the company to the need for the positive action at the so called threshold point, where some change to strategy will be essential. As sales peak and falter the company has to look at the relative merits of revitalizing the product, allowing it to decline slowly, or killing it off and planning a replacement.

Economic valuation of biodiversity and ecotourism has been carried out by several researchers (Freeman, 1993; Pearce and Turner, 1990; Brookshire *et al.,* 1986; Cummings *et al.,* 1986; Dixon and Sherman, 1991). Attempts to incorporate biodiversity values and benefits into resource allocation through economic valuation have been made by Maharana *et al.,* (2000); Freeman, (1993); Mitchell and Carson, (1989). In the words of the World Development Report (1992) there is a growing consensus that policies for economic efficiency and for environmental management are complimentary.

The Queensland Ecotourism Plan (Department of Tourism, Small Business and Industry, 1997) stated that ecotourism operators and their employees require specialized training in areas such as ecology, environmental education, environment and resources management, communication and business skills etc. Training should be competency based, to the particular requirement of the industry and provided in a culturally appropriate manner. The economic literature has shown that valid Contingent Valuation (CV) question of Willingness- to- pay (WTP) must include three components which are: (i) detail description of the resources to be valued, including the initial and alternative conditions of the hypothetical scenario; (ii) the form of frequency of payment which includes options such as higher income taxes, increases in utility bills and payment to dedicated trust; and (iii) how respondents are asked their WTP (e.g. open ended question, payments cards or referendums at specified dollar amounts).

Thompson and Strohm (1996) addressed the factors related to economic growth and environmental quality particularly the Environment Kuznets Curve (EKC). The most obvious aspect of contingent valuation is the assumption that people should pay if they value the change in the public good. Given this assumption, certain reasons why people will not pay become problematic (Lindsey, 1994). Tourism could be a means of re-distributing economic resources, mitigating the socio-economic situation both at local and national scale and contributing to biodiversity conservation (Henry, 1979; Boo, 1990; WWF, 1995). Cost benefit analysis (CBA) is the most widely used technique to assess nature conservation economically, even though it does not adequately capture the multiple values of biodiversity (Pearce and Moran, 1994). In general the loss of an area can only be avoided if the value of conservation outweighs the opportunity costs and the direct costs of protection (resulting from building on infrastructure, payment for administration and staff, educational programs, monitoring etc. (Dixon and Sherman, 1991; Pearce and Moran, 1994). Economists have shown how obtaining unbiased and theoretically correct estimates of non-use values depends on examining underlying motivations (Bragstron, 1990). Laven *et al.,* (2005) have recently emphasized the importance of enabling visitors to make trade-off as part of their responses. For example, how might a visitor trade-off among their desires for solitude, a quality resource and reasonable public access in setting standards. The last concern again methodological is the significant effect of question format on visitor's responses. Bateman *et al.,* (1997) under took a Contingent Valuation (CV) study to assess the monetary value of conserving the Norfolk Broads, a wet-land site in UK that cover three National Natural Reserves. The estimation results from a mail survey show that respondents living in a defined near- Norfolk Broads zone and willingness- to- pay (WTP) of 12l£ where as those living elsewhere UK zone had a WTP of 4l £ (Johnston, 2000). Ecosystem such as tropical rainforests, coral reefs, mountains, savannah and deserts in developing countries are a draw card ecotourism. In the present study, an effort has been made to assess the biodiversity conservation and ecotourism in Simien Mountain National Park, Ethiopia for better management of park and in the same time enhance the socio-economic condition of the local communities.

3. Results and Discussion

3.1. An Analysis of the Willingness-to-pay (WTP)

3.1.1. Socio-economic Analysis

Prior to starting the analysis of willingness-to-pay, Table 3.1 gives descriptive statistics of the key variables. The data base has 150 valid observations of international visitors. The average age of respondents included in the sample is 38 years, ranging from 18 to 65 years. More than 62 % of the samples consisted of male respondents. With respect to educational qualification, 76% of respondents had bachelor degree and above, 14% diploma holder and 10% had higher secondary education. Occupation of the respondent showed 42% are from professionals, 21% government servants, 19% students, 11% are from business and 7% are retired persons. The average

monthly income of respondents amounts to USD 995.The result showed that majority of the respondents were in the productive age group and they were males with the bachelor degree and above.In relation with their occupation most of them were professionals, government servants and students.

The attractions of visitors were diverse. A majority came for recreation/trekking, followed by view mountain peaks, and wild animals and plants. Trekking duration ranged from 5 to 12 days with an average of 7 days. Normal daily expenditure by tourists ranged from Ethiopian Birrs 200-300, with an average value of Ethiopian Birr250 depending on nature of trek (independent or organized tourism).

Variables	Arithmetic mean	Standard Deviation	Lowest value	Highest value
AGE	7.5	24.0	18	65
SEX	.38	0.47	-	-
EDQ	15.32	1.52	12 Years*	16 years**
OCU	3.39	0.65	-	-
INC US$	895.6	958.88	$100	$1000
WTP US$	8.83	9.26	$1000	$150

Table 1: Descriptive statistics of key variables (n=150)

AGE: Respondent's age in years; SEX: Male-1, Female-2; EDQ: Years of Schooling; OCU: Occupation; Service-5, professional-4, business-3, retired-2, student-1; INC: Income; monthly income; WTP: Willingness- to- pay per visit

* Secondary level; ** Postgraduate level

Analysis of visitors' attitude on environment, perception towards protection of SMNP, revealed that 70% considered it "very important", 25% "important", 2% "not very important", and about 3% "indifferent". Perception on biological diversity loss justification in the context of the park showed that majority of visitors agreed that conservation of the national park is important. (Table 6.2)

Opinion	Foreign Visitors	
	(No)	(%)
Very important	105	70.0
Important	38	25.33
Not very important	3	2.0
Indifferent	4	2.66
Total	105	99.99

Table 2: measuring the importance of environmental protection/conservation among foreign visitors of SMNP (2010)
Source: Field Survey (2010)

A question direct relevance of the SMNP for avoidance of biodiversity loss at any cost was acceptable by the visitors and 94% of them agreed to the avoidance of biodiversity loss at any cost. In response to environmental problems and steps to be taken for conservation, about 26% responded that there is no need to conserve the biodiversity of the national park because it is in good condition, however the situation is the reverse, while 55% expressed conservation needs (Table 2). On the question that should conserve and maintain the park, about 10% was not sure. The rest 56% of respondents felt that the conservation in the SMNP should be a collective effort, with the next ranked being government and community jointly (Table 2).

QUESTIONS				
Opinion	Biodiversity loss justification in the context of SMNP		Avoidance of SMNP biodiversity loss at any cost	
	(No)	(%)	(No)	(%)
Strongly disagree	6	4.0	2	1.33
Disagree	27	18.0	1	0.66
Neutral	-	-	7	4.66
Agree	41	27.33	43	28.66
Strongly agree	76	50.66	97	64.66
Total	150	100	150	100

Table 3: Respondents' perception on the importance of conservation in SMNP, Ethiopia
Source: Field Survey (2010)

Response for the implementing authority	International Visitors	
	(No)	(%)
Government	34	22.6
Non Government organization	6	
Local community	24	4.0
Collective effort	84	16.0
Can not say	2	
Total	150	56.0

Table 4: Respondents attitude for the protection of SMNP, Ethiopia (2010)
Source: Field Survey (2010)

3.2. Analyzing Stated Willingness-to-pay (WTP)

Generally those respondents who are getting direct benefits from the park were considered for analysis of WTP, but in the present study the WPT was assumed to be a function of the respondents' personal characteristics and income level. Other variables, education level were used as an explanatory variable. Greater number of years of schooling would arguably increase the knowledge of a person. Perhaps education would help a person comprehend news about the environmental effects of economic development. Age and gender were also used as explanatory variables. Results of this study for willingness-to-pay are presented in Table 3.5. The result shows that the average response rate was 46%, on the question regarding the motivation behind the respondents WTP for conservation. Only 35% visitors indicated a positive reaction to WTP for conservation and protection of the SMNP, while 11% agreed on condition that the amount would be utilized in constructive manner and 54% refused to pay.

Variables	Willingness- to – Pay
Mean value per visitor	8.83
**Aggregate value for all visitors	3612
* Respondents with WTP (%)	35.3
+ Response rate (%)	45.8

Table 5: Summary results from Contingent Valuation (CV) questions SMNP, Ethiopia, (2010)

WTP: Willingness-to-pay, US$1= Birrs (Ethiopian currency 13) (as per the conversion rate 2010)
** The non respondents were assumed to have WTP equal to that answered
* Based on the total; respondents who responded positively for WTP
+ Based on total visitors

An analysis of WTP provides an opportunity to study the content and context validity of the interview schedule. An Ordinary Least Square (OLS) regression was used to analyses WTP. The regression revealed that the variables attained the expected signs, as presented in Table 3.6. The R^2 value is encouraging in the present context. Age showed a positive correlation with WTP. It was found that middle age and old age group of people could spare the money to accept CV bids while the young age group could spare less. This suggests that the age is a major factor to accept the WTP. Also the respondent's gender and domicile status were not in statistically significant correlation to the WTP. The latter means that based on the sample, one cannot conclude that the visitors of the SMNP were acting differently from the inhabitants of the area or that they perceived the environmental goods and their inherent natural and cultural heritage differently.

Educational qualification showed a significant positive correlation with WTP (P<0.001). Occupation was not a major factor to accept the CV bids. Those people who are directly involved with tourism related activities and getting more economic returns were interested to pay for WTP as compared to those who were not getting the economic benefit from tourism. The results also indicate that business men were willing-to-pay more than professional. This finding has important policy implications as businessmen have the most potential for financing environmental improvements. Sex did not influence the visitation rate and the WTP for conservation. The income of visitors significantly influenced their willingness-to-pay for conservation of the park (Table 3.6).

The number of visitors is increasing at a very fast rate in Ethiopia. As well as in Simien Mountain National Park also. Compare to other parks in Ethiopia, the frequency of visitors was less in the SMNP because most of the visitors seldom return to trek for a second time in the same area. Therefore, the WTP stated by all the visitors was for that particular period. The demand for recreation in Ethiopia by foreign visitors was price inelastic. This observation is consistent with previous recreational studies (Navrud and Mungatana, 1994). Walsh (1986) gave an overview of the price elasticities of demand for various recreational activities. There were 23 cases of outdoor recreation activities with a price elasticity of demand. The price elasticity of demand for a recreational activity is generally low when the proportion of income spent on it is low (Walsh, 1986). Income elasticity in studies done in developed countries is small, but much larger than that observed in present study. This may be an indication of the income effects at the national income level. As our income levels grow the income elasticity may improve for environmental goods. Education level was found to increase with WTP. Every one-year increase in education increased the WTP by 5% (Hadker *et al.,* 1997). Attitudes are good predictors of a person's actual and sated behaviour.

Component	
Dependent variables	WTP
No. of observation	150
Multiple R	0.241
Square multiple R	0.074
Adjusted Square Multiple R	0.063
Standard Error	301.947

Variables	Coefficient	Std. Error	t value	P<
AGE	5.880	1.765	2.058	0.000
SEX	25.880	42.096	-0.379	0.332
EDQ	21.090	6.910	1.883	0.001
OCU	-4.250	19.485	-0.134	0.511
INC	0.003	0.001	1.943	0.001
AGE	5.880	1.765	2.058	0.000
SEX	25.880	42.096	-0.379	0.332
EDQ	21.090	6.910	1.883	0.001
OCU	-4.250	19.485	-0.134	0.511
INC	0.003	0.001	1.943	0.001

Analysis of variance					
	Sum-of-squares	DF	Mean-Squares	F-Ratio	P<
Regression	4832533.149	4	9665662.99	4.039	0.00
Residual	3.50046E+03	146	147698.922		

Table 6: Result of multiple regression estimation in SMNP

AGE: Age, SEX: Sex, EDQ: Educational qualification, OCU: Occupation, INC: Income

For the entire samples, using means of variables the estimated willingness-to-pay for the management of SMNP was USD 8.83 by foreign visitors per trip. The question regarding the confidentiality concerning the right amount for their conservation contribution, about 8% stated "very confident", while 19% "confident", 5% "undecided" and 3% "not very confident" (Table 3.7).

Response	(No)	(%)
Very confident	12	8
Confident	29	19
Undecided	7	5
Not very confident	5	3
Total	53	35

Table 7: Evaluation of foreign visitors about the confidentiality of the amount WTP for their conservation contribution to SMNP, (2010)

Source: Field Survey (2010)

As already mentioned, there are relatively few applications of contingent valuation to national parks available for comparison, but no one in Ethiopia. However, as can be inferred from the application of contingent valuation to a cross-border region. Compared to other parts of African country, the frequency of visitors was less in SMNP, because most of the visitors seldom return to trek for a second time in the same area. Therefore, the WTP stated by all the visitors was for that particular visit. This study revealed that the visitors' WTP did not depend upon the benefits they would get in preserving the park, but most of them stated that their WTP was just to keep the beautiful, unexploited landscape and rich biodiversity of this area intact. Same observation was also reported by Maharana, *et al*., (2000). The demand for nature/ecotourism in Ethiopia by international visitors has also been increasing.

The analysis of qualitative landscape features showed that Ethiopians were increasingly interested in the conservation of historical and traditional flora and fauna. Thus compare this result with those from available contingent valuation studies in the national park. Fomenko *et al.,* (1997) performed an economic valuation of park Gorushka in the Yaroslavi oblast of Russia, and established that the average combined (in money and in kind) WTP for residents was USD 2.3 per year. Kluvankova (1999) analyzed Mala Fatra National park in the Slovak Republic, and established that the average WTP was USD 86 and USD 4 respectively for residents and visitors. Hadker *et al.,* (1997) performed willingness-to-pay for Borivali national park of India and established that the average WTP for residents was Rs 21 per year. Maharana, *et al*., (2000) analyzed Khangchendzonga National Park of Sikkim Himalaya, and established that the average combined WTP for residents, domestic visitors and foreign visitors were USD 10, 4, and 16 , respectively.

4. Conclusion and Recommendation

The CVM, Contingent Valuation Method attempts to value non market goods by asking people Willingness To Pay . Therefore the government officials need to encourage and advocate for the willingness to pay for the conservation of the park.

Perception of the International visitors who visited the park in 2010 perceived that the conservation of the park is very important and majority of them were also willing to pay for the conservation of the park. Therefore the park officials should implement practices of conservation in the park.

To whom the conservation practices of SMNP should belong? The International visitors responded that must be the collective effort including the government, the community, the Non Governmental Organizations and stakeholders. Therefore the government should mobilize all the community, NGO's and other stakeholders through different mechanisms including creation of awareness.

Confidentiality of the amount of WTP of those international visitors of 2010 was confident. Therefore the park officials should collect the money that visitors Promised for the WTP properly and use it only for the conservation activities of the park and even they should search for other funding organizations for additional finance source that enables the park officials to achieve the goals of conservation in the SMNP.

5. References

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